

MULTIMEDIA



UNIVERSITY

STUDENT IDENTIFICATION NO

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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

BBF3124 – FINANCIAL DERIVATIVES

(All sections / Groups)

7th MARCH 2018
2:30 PM – 4:30 PM
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This Question paper consists of 5 pages with two (2) parts: PART A (3 Questions)
PART B (2 Questions)
2. Answer ALL questions in PART A and any one (1) question in PART B.
3. The distribution of the marks for each question is given at the end of each question.
4. Please write all your answers in the Answer Booklet provided. Start each answer on a new page.

PART A – ANSWER ALL QUESTIONS**QUESTION 1**

(a) Define the following terms:

- (i) Open interest
- (ii) Convergence
- (iii) Basis

(6 marks)

(b) Suppose you observe the following quotations today.

3-month SIF price	=	1818
Index value	=	1722
Borrowing cost	=	6% per annum
Dividend yield	=	2.5%
Time to maturity of SIF	=	90 days

(i) Calculate the "fair value" of the 3-month SIF contract price.

(2 marks)

(ii) Determine whether the index is overpriced or underpriced.

(2 marks)

(iii) Assuming that you can borrow the fund of RM2 million and which both future and cash prices have converged to 1850 at maturity, outline the strategy to complete the arbitrage and calculate the profit or loss.

(11 marks)

(c) Compare the differences between arbitraging and hedging.

(4 marks)

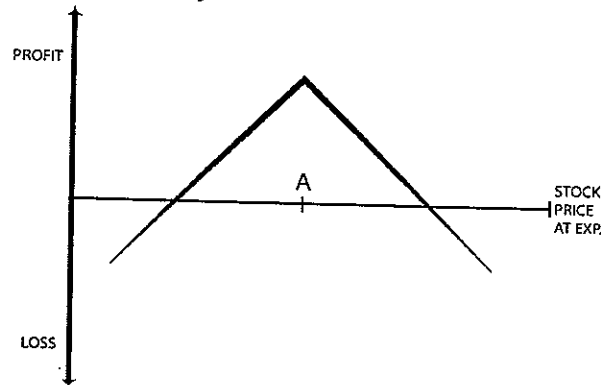
(Total: 25 marks)

Continued...

QUESTION 2

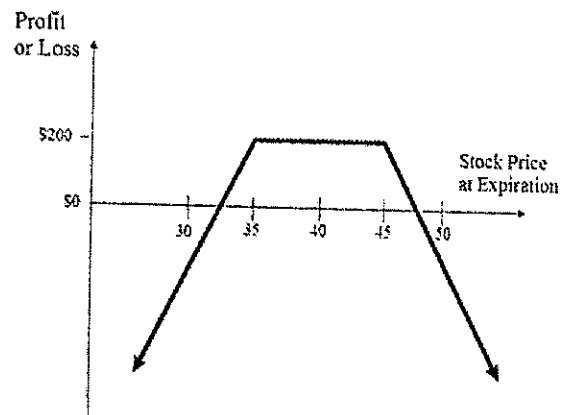
- (a) Name the strategies and describe the desired objectives based on the payoff diagrams shown below:

(i)



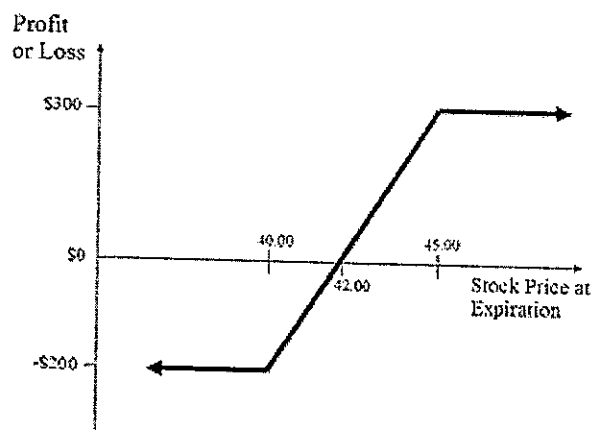
(3 marks)

(ii)



(3 marks)

(iii)



(3 marks)

Continued...

- (b) You have purchased NETIZEN Berhad stock last year and its current price is at RM7.20. NETIZEN Berhad is a stable company with good fundamental, low-leveraged balance sheet and stable business. From the past record, this company is paying 2.5% dividend averagely every year. You are happy with the dividend earned but you wish to enhance your revenue. Given the following quotations, answer the following questions.

RM7.50 Call @ RM0.20

RM7.50 Put @ RM0.50

- (i) State the type of stock you are having.

(2 marks)

- (ii) State the most appropriate strategy that you can formulate in order to meet your objective.

(3 marks)

- (iii) Fill in the payoff table below.

Stock price at maturity (RM)	Payoff to long stock	Profit/loss to your strategy	Net profit/loss
6.00			
6.40			
6.80			
7.20			
7.60			
8.00			
8.40			
8.80			

(8 marks)

- (iv) Draw the payoff diagram.

(3 marks)

(Total: 25 marks)

QUESTION 3

- (a) Define "naked" or uncovered position. List the six possible positions.

(8 marks)

Continued...

- (b) What is a spread strategy? Compare the risk of spread strategy to outright position.
(6 marks)
- (c) Define delta. If you wish to hedge a position equivalent to 200 TM stocks and the call delta is 0.60, how many puts you need to fully hedge the position?
(7 marks)
- (d) Explain why margin is required when you sell options but not when you buy options. Justify your answer.
(4 marks)
- (Total: 25 marks)

PART B – ANSWER ONE (1) QUESTION ONLY

QUESTION 1

TUKANG Berhad shares are currently at RM30.00. 3-month call and put options with RM30.00 exercise price are being quoted at RM1.50 and RM0.38 respectively. The risk free rate is 12% per year.

- (a) Using Put-Call parity, prove that there is mispricing.
(6 marks)
- (b) Identify the security that is mispriced relative to the others.
(6 marks)
- (c) Outline the arbitrage strategy and show the arbitrage assuming you invested in one lot/contract.
(8 marks)
- (d) Graph the overall position.
(5 marks)
- (Total: 25 marks)

Continued...

QUESTION 2

- (a) Briefly discuss when you will use the strategies below:
- (i) Long strangle. (4 marks)
 - (ii) Long straddle. (4 marks)
- (b) Black Scholes Option Pricing model is built based on a set of assumptions.
- (i) Briefly explain any **THREE (3)** of the eight key assumptions. (You are required to exclude “no dividend payment” assumption from your answer). (12 marks)
 - (ii) One of the assumptions is no dividend payment. Discuss how to adjust dividend payment in valuing stock options. (5 marks)
- (Total: 25 marks)

End of Paper